AFTER FINAL EXPEDITED PROCEDURE

REMARKS

Claims 1 to 78 were pending in the application at the time of examination. Claims 1, 20, 39, 58, 77, and 78 stand objected to for informalities. Claims 16, 18, 35, 37, 54, 56, 73, and 75 stand rejected for obviousness type double patenting. Claims 1 to 78 stand rejected as obvious.

Claims 1, 20, 39, 58, 77 and 78 stand objected to for reciting "optimizing said first instruction to a second instruction." Applicants note that this objection is being raised for the first time in a final action. Accordingly, Applicants request withdrawal of the final designation as premature.

The rejection stated in part:

> An instruction can be optimized in that it is affected so it becomes more efficient in size or in execution resource. A conversion takes one instruction in one initial form then generates another form from it. Optimizing cannot be described in way that a first instruction is optimized to a second instruction.

Applicants respectfully note that no authority is cited to support this rejection and in particular, the rejection is not based on any interpretation supported by the specification or any other evidence. Applicants respectfully submit that examiner argument is not a basis for contradicting the teaching of the specification.

The above quoted analysis specifically ignores and contradicts the explicit teaching of the specification that described in some detail how to optimize a first instruction to a second instruction. For example, as shown in Fig. 5.

//

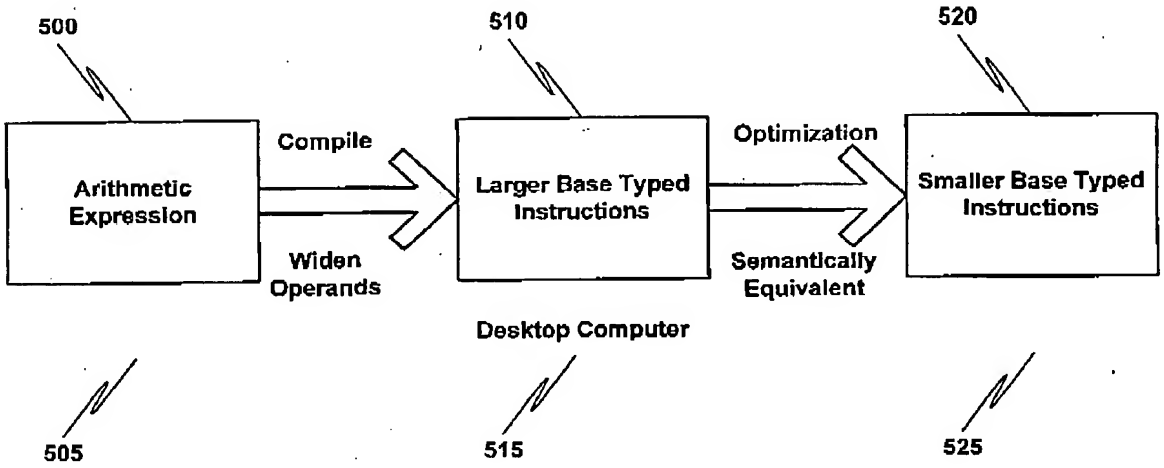
//

//

//

GUNNISON, McKAY & HODGSON, L.L.P.
Garden West Office Plaza
1900 Garden Road, Suite 220
Monterey, CA 93940
(831) 655-0880
Fax (831) 655-0888

AFTER FINAL EXPEDITED PROCEDURE



The description provides:

[0022] Embodiments of the present invention are described herein in the context of a method and apparatus for optimization of N-base typed arithmetic instructions via rework.

[0032] . . . .The larger base typed instructions 510 are optimized to semantically equivalent smaller base typed instructions 520 for execution on a resource-constrained device 525. For example, a "short"-type addition instruction is used to operate on "short"-typed operands, and the result is type "short".

[0033] According to another embodiment of the present invention, the optimization to semantically equivalent smaller base typed instructions is part of a just-in-time code generator. Just before a set of instructions is executed for the first time, the unoptimized instructions are optimized to semantically equivalent smaller base typed instructions for execution on a resource-constrained device. Subsequent execution of the same set of instructions use the set of optimized instructions.

Moreover, the plain meaning of the claim first defines the first instruction "a first instruction configured to operate on at least one operand of a first type. Next, the plain meaning

GUNNISON, McKAY & HODGSON, L.L.P.
Garden West Office Plaza
1900 Garden Road, Suite 220
Monterey, CA 93940
(831) 655-0880
Fax (831) 655-0888

of the claim is that the first instruction is optimized to a second instruction and the claim defines the second instruction and the basis for the optimization. Thus, the Claim defines that optimization is done with a first instruction as input and a second instruction as output.

As noted above, the specification provides multiple examples of how such optimizations are done. There is no requirement that the claim recite the operations that comprise the optimization. The claim must simply recite what Applicants regard as the invention. It is the function of the specification and not the claims to describe the invention, e.g., the optimization. Clearly, in view of the extensive description in the specification (a sample of which was quoted above) a first instruction can be optimized to a second instruction.

Further, it has long been established that claim breadth does render a claim indefinite. In addition, the MPEP and the courts put specific limitations on the breadth of such an interpretation. Specifically,

> **CLAIMS MUST BE GIVEN THEIR BROADEST REASONABLE INTERPRETATION**
>
> During patent examination, the pending claims must be "given their broadest reasonable interpretation consistent with the specification." (Emphasis Added.)

MPEP § 2111 8th Ed. Rev. 5, p 2100-37 (August 2006). Therefore, any interpretation of this claim element must be consistent with the specification. The above objection is not consistent with the specification. Applicants respectfully request reconsideration and withdrawal of the objection to each of Claims 1, 20, 39, 58, 77, and 78.

Claims 16, 18, 35, 37, 54, 56, 73 and 75 stand rejected for obviousness-type double patenting in view of U.S. Patent No. 7,107,581, hereinafter referred to as the '581 patent.

Claim 18 in the instant application stands rejected in view of Claim 12 in the '581 patent, while Claim 16 in the

GUNNISON, McKAY & HODGSON, L.L.P.
Garden West Office Plaza
1900 Garden Road, Suite 220
Monterey, CA 93940
(831) 655-0880
Fax (831) 655-0888

AFTER FINAL EXPEDITED PROCEDURE

instant application stands rejected in view of Claims 53, 54 of the '581 patent.

Claim 18 in the instant application depends from Claims 1, 16 and 17. Accordingly, Claim 18 includes all the limitations of Claims 1, 16, 17 and 18. The rationale for maintaining the rejection stated in part:

> The Applicants have submitted that '581 claim 1 does not suggest validating; optimizing, and matching as recited in the instant claim 1 and that '581 claim 12 suggests instant claim 17 (Appl. Rmrks pg. 3 1, top half). The converting an instruction in a first base to a second base smaller than the first base by '581 claim 1 teaches optimizing; and the determining of type as set forth in '581 claim 12 entails inherent matching in order to validate the propriety of size to prevent potential overflow.

Assuming that this is all correct, the rejection failed to demonstrate that Claim 1 of the '581 suggests or discloses validating as recited in Claim 1 of the instant application. Nothing more is needed to overcome the obviousness-type double patenting rejection.

For purposes of appeal, Applicants traverse the interpretation given above. It is not based on any teaching in the claims and relies upon Applicants' disclosure, which is an improper level of analysis. Further, the rationale for continuing the rejection attempts to read out limitations in Claim 18, i.e., the limitations of Claim 17. Claim 18 includes, by definition, all the limitations of Claims 1, 16, 17 and 18. To argue away the limitations of Claim 17 reduces the limitations in the two claims to a gist, which is an improper form of analysis. Claim 12 of the '581 patent does not teach or suggest the limitations of both Claims 17 and 18 taken together. Thus, there are multiple reasons why Claim 12 of the '581 patent and Claim 18 of the instant application are patentably distinct. Similar comments are also applicable to

GUNNISON, McKAY & HODGSON, L.L.P.
Garden West Office Plaza
1900 Garden Road, Suite 220
Monterey, CA 93940
(831) 655-0880
Fax (831) 655-0888

each of Claims 37, 56 and 75. Applicants respectfully request reconsideration and withdrawal of the obviousness-type double patenting rejection of each of Claims 18, 37, 56 and 75.

Claim 16 in the instant application patent depends from Claim 1. Thus, Claim 16 includes all the limitations of Claims 1 and 16. Applicants previously pointed out "Claim 53 fails to teach or suggest anything with respect to validating." The rationale for continuing the rejection ignored this distinction and stated:

> The Applicants have submitted that '581 claim 53 does not suggest validating, and 'elimination of the operator characteristics' as recited in the instant claim 1 (Appl. Rmrks pg. 33, bottom half). It is noted that there is no recital of 'elimination of operator characteristics' and the subject recited in claim 1 amounts to matching operand of first type with that of a second type, and in a process of configuring a operand in a first type to a second operand type, observing the respective bounds prior to converting or optimizing this first operand to make it smaller based on the above matching with the second type. '581 claim 1 and claim 53 recite a context to effectuate a equivalent scenario in which converting operand from one base to another smaller base consists of generating an optimized operand for the second base, respecting in the process an wide size overflow associated with an operand as it is determined for bounds within a chain of instructions. The double patenting rejection is an provisional rejection of obvious type. Hence as long as the respective contexts (instant claim 16 and '58 1 claim 53) amount to a analogous teachings (i.e. same contextual endeavor with similar implementation approaches), a slight difference in wording between the claims would have to be considered as an obvious variation of one another for the end result of the invention would be the art; no rebut against anticipation being at stakes here.

Reading a limitation out of claim is not "a slight difference in the wording," but rather an improper form of analysis. Further, it the claim language itself that must be compared and not the gist of the claim as was done in the above analysis. The standard for a provisional rejection is no

GUNNISON, McKAY & HODGSON, L.L.P.
Garden West Office Plaza
1900 Garden Road, Suite 220
Monterey, CA 93940
(831) 655-0880
Fax (831) 655-0888

different from the standard from a non-provisional rejection and to the extent that the rejection implies otherwise is error. The fact that '581 patent fails to suggest or disclose any validating operation alone is sufficient to overcome the rejection and this distinction was ignored in the continuing rationale for the rejection. It is unnecessary to go in further detail to rebut the above analysis. Claim 54 includes limitations similar to those of Claim 53 and so the remarks with respect to Claim 53 are directly applicable to Claim 54. Similar comments are also applicable to each of Claims 35, 54 and 73. Applicants respectfully request reconsideration and withdrawal of the obviousness-type double patenting rejection of each of Claims 16, 35, 54 and 73.

Claims 1 to 78 remain rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,740,441, hereinafter referred to as Yellin, in view of U.S. Patent No. 6,308,317, hereinafter referred to as Wilkinson. The rationale for continuing the rejection stated in part;

> It is deemed that Yellin reconfigures the bytecodes while analyzing first instruction on the basis of the size requirement as to how much in size the stack operand would be needed to alleviate runtime overflow;

Again, the rejection relies only on Examiner argument without any citation to Yellin. Further, the Examiner argument directly contradicts the express teaching of Yellin.

Yellin addresses verification only and does not suggest or teach modifying any instruction. Yellin steps thorough the code and if an illegal condition is found simply aborts the process. Each of Figs. 4A to 4C of Yellin show that if an improper condition is found the verification is aborted. There is no operation of Yellin that teaches doing anything to one instruction to obtain another instruction as recited in Claim 1. Accordingly, the above unsupported statement goes against the express teaching of Yellin.

GUNNISON, McKAY & HODGSON, L.L.P.
Garden West Office Plaza
1900 Garden Road, Suite 220
Monterey, CA 93940
(831) 655-0880
Fax (831) 655-0888

AFTER FINAL EXPEDITED PROCEDURE

Moreover, the Claim 1 as noted above recites "a first instruction configured to operate on at least one operand of a first type." Claim 1 also recites "optimizing said first instruction to a second instruction configured to operate on at least one operand of a second type," which in view of the definition can be read as

> optimizing said first instruction configured to operate on at least one operand of a first type to a second instruction configured to operate on at least one operand of a second type.

Thus, the Claim defines that a first instruction is optimized to obtain a second instruction and defines a property of both instructions. The claim further defines the result of the optimization in that "said second type smaller than said first type" and defines a requirement for the optimization, "said optimizing based at least in part on the relative size of said first type and said second type." Thus, the claim expressly recited the input to the optimization, the first instruction; the output of the optimization, the second instruction; and the optimization utilizes at least the relative size of the two types.

Thus, Yellin must suggest starting with a first instruction and after optimization ending up with a second instruction with the two instructions having properties with the relationship recited. Further, Yellin must suggest that the optimization is based at least on the relative size of said first type and said second type.

Verification of bytecodes and aborting when a problem is encountered, as taught by Yellin, fails to suggest or disclose an operation that starts with a first instruction and generates a second optimized instruction as recited in Claim 1. The rationale for continuing the rejection demonstrates that the plain meaning of the claim was not considered and that express claims limitations were not considered.

GUNNISON, McKAY & HODGSON, L.L.P.
Garden West Office Plaza
1900 Garden Road, Suite 220
Monterey, CA 93940
(831) 655-0880
Fax (831) 655-0888

AFTER FINAL EXPEDITED PROCEDURE

In addition, since Yellin fails to suggest or teach doing anything to one instruction to obtain another instruction as recited in the Claim, Yellin also fails to teach or suggest any matching operation with the characteristics required by the Claim. In particular, the rejection has failed to identify in Yellin, a second instruction associated with an input stack that has the requisite relationship to the first instruction.

Applicants note that a second reference was cited with respect to "changing the type of instructions in a chain," but assuming the combination is correct, the second reference fails to correct the deficiencies of the primary reference and so the combination fails to render Claim 1 obvious. Applicants respectfully request reconsideration and withdrawal of the obviousness rejection of Claim 1.

Claims 2 to 19 depend from Claim 1 and so distinguish over the combination of references for at least the same reasons as Claim 1. Applicants request reconsideration and withdrawal of the obviousness rejection of each of Claims 2 to 19.

Claims 20, 39, 58, 77 and 78 each include limitations similar to those of Claim 1. Accordingly, the above remarks with respect to Claim 1 are applicable to each of these claims and are incorporated herein by reference. Applicants request reconsideration and withdrawal of the obviousness rejection of each of Claims 20, 39, 58, 77 and 78.

Claims 21 to 38 depend from Claim 20 and so distinguish over the combination of references for at least the same reasons as Claim 20. Applicants request reconsideration and withdrawal of the obviousness rejection of each of Claims 21 to 38.

Claims 40 to 57 depend from Claim 39 and so distinguish over the combination of references for at least the same reasons as Claim 39. Applicants request reconsideration and withdrawal of the obviousness rejection of each of Claims 40 to 57.

GUNNISON, McKAY & HODGSON, L.L.P.
Garden West Office Plaza
1900 Garden Road, Suite 220
Monterey, CA 93940
(831) 655-0880
Fax (831) 655-0888